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Catalogue of Type and Referred Specimens of Fossil Echinozoa (Echinoidea and Cyclocystoidea) in Field Museum of Natural History

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INTRODUCTION

This part of the catalogue of type specimens of echinoderms includes two classes—echinoids and cyclocystoids. All fossils included here are in the custody of Field Museum of Natural History; former Walker Museum (University of Chicago) specimens are identified by the letters UC; the Field Museum specimens by the letters P or PE.

Only holotypes are recognized as types; all other types, including cotypes, paratypes, and plesiotypes, are designated referred specimens. The generic and specific names are listed in their original spelling. The name of the author of the species is always given and is followed by the original date of publication. An attempt has been made to note all systematic changes. The nomenclatural emendations on specific levels not based on our specimens are given under "*Remarks.*" The stratigraphic and geographic data are those of the original authors supplemented by information from the Museum catalogues.

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CATALOGUE OF TYPE AND REFERRED SPECIMENS
ECHINOIDEA**Archaeocidaris legrandensis** S. A. Miller and Gurley, 1890

Holotype: UC 6198.

S. A. Miller and Gurley, 1890, p. 59, pl. 10, fig. 15.

S. A. Miller and Gurley, 1891, p. 373, pl. 10, fig. 15.

Jackson, 1912, pp. 260-261, pl. 10, fig. 4.

Referred specimen: UC 12314.

Jackson, 1912, pp. 260-261, pl. 10, fig. 3.

Mississippian, Kinderhook.

LeGrand, Iowa; Gurley Collection.

See also: *Eocidaris blairi* S. A. Miller, 1891.

Archaeocidaris sp.

Referred specimens: UC 16178, three specimens.

Mather, 1915, p. 110, pl. 2, fig. 10.

Pennsylvanian, Brentwood Limestone.

Mather, 1915, locality 147, near Fayetteville, Arkansas; Mather, donor.

Referred specimens: UC 48305, two specimens.

Easton, 1942, pl. 2, figs. 3 and 4.

Mississippian, Pitkin Formation.

Quarry in road cut on hill 0.52 miles south of Post Office at Leslie, Arkansas; Easton Collection.

Cassidulus hemisphaericus Slocum, 1909

Holotype: original designation P 10347.

Slocum, 1909, pp. 7-8, pl. 1, figs. 7-9.

= *Hardouinia hemisphaerica* (Slocum, 1909)

Kier, 1962, p. 150, pl. 21, figs. 9 and 10.

Cretaceous, Ripley Group.

"White gullies" on Patterson farm about three miles south of Pontotoc, Mississippi; collected by Slocum.

Cassidulus intermedius Slocum, 1909

Holotype: original designation P 10346.

Slocum, 1909, pp. 6-7, pl. 1, figs. 1-6.

Cretaceous, Ripley Group.

Near southern edge of the village of Pontotoc, Mississippi; collected by Slocum.

Eocidaris blairi S. A. Miller, 1891

Holotype, not designated, to be selected from UC 8855.

Referred specimens: UC 8855, two specimens.

S. A. Miller, 1891, p. 73, pl. 12, figs. 1 and 2.

S. A. Miller, 1892a, p. 683, pl. 12, figs. 1 and 2.

S. A. Miller, 1892b, p. 678, text figs. 1226 and 1227.

= *Archaeocidaris legrandensis* S. A. Miller and Gurley, 1889

Jackson, 1912, pp. 260–261, pl. 8, figs. 7–8, pl. 9, figs. 12–13.

Mississippian, Keokuk.

Boonville, Missouri; Faber Collection.

Hardouinia hemisphaerica (Slocum, 1909)

See: *Cassidulus hemisphaericus* Slocum, 1909.

Hemiaster lacunosus Slocum, 1909

Holotype: original designation P 10342B.

Slocum, 1909, pp. 10–11, pl. 2, figs. 1–7.

Referred specimens: P 10342A, C–E, four specimens.

Slocum, 1909, pp. 10–11.

Cretaceous, Ripley Group.

Pontotoc, Mississippi; collected by Slocum.

Lepidesthes colletti White, 1878

Referred specimen: UC 6340.

White, 1878, pp. 33–34.

White, 1883, pp. 163–164, pl. 40, figs. 2a and 2b.

Jackson, 1912, pp. 425–430, pl. 69, figs. 2 and 3.

Mississippian, Keokuk Group [Salem Limestone ?].

Salem, Washington County, Indiana; Gurley Collection.

Referred specimen: UC 6641.

Jackson, 1912, pp. 425–430, pl. 69, fig. 4, pl. 70, fig. 2.

Mississippian, Keokuk.

Bono, Lawrence County, Indiana; Gurley Collection.

Lepidesthes formosus S. A. Miller, 1879

Holotype: UC 6604A.

S. A. Miller, 1879, pp. 41–42, pl. 8, fig. 4.

Jackson, 1912, pp. 418–420, pl. 66, figs. 4 and 5, pl. 68, figs. 4–7.

Referred specimen: UC 6604B.

Jackson, 1912, pp. 418–420, pl. 66, fig. 6; pl. 68, figs. 8 and 9.

Mississippian, Kaskaskia.

Pulaski County, Kentucky; Gurley Collection.

Lepidocentrus irregularis Meek and Worthen, 1869

Holotype: UC 10522.

Meek and Worthen, 1869, pp. 78–79.

= *Pholidocidaris irregularis* (Meek and Worthen, 1869)

Meek and Worthen, 1873, pp. 512–513, pl. 15, figs. 4c and 9a–b.

Jackson, 1912, pp. 434–440, pl. 75, figs. 3–5.

Mississippian, Keokuk.

Hamilton or Nauvoo, Illinois; Gurley Collection.

Linthia variabilis Slocum, 1909

Holotype, not designated, to be selected from P10457 and P 10458.

Referred specimens: P 10457, eight specimens.

Slocum, 1909, pp. 12–14, pl. 3, figs. 1–4.

Referred specimens: P 10458, 11 specimens.

Slocum, 1909, pp. 12–14, pl. 3, figs. 5–11.

Cretaceous, Ripley Group.

Pontotoc, Mississippi; collected by Slocum and Goff.

Melonechinus indianensis (S. A. Miller and Gurley, 1894)

See: *Melonites indianensis* S. A. Miller and Gurley, 1894.

Melonites indianensis S. A. Miller and Gurley, 1894

Holotype: UC 6622.

S. A. Miller and Gurley, 1894, pp. 5–6, pl. 1, fig. 1.

= *Melonechinus indianensis* (S. A. Miller and Gurley, 1894)

Jackson, 1912, pp. 369–371, text figs. 237,1–237,4, pl. 51, fig. 7.

Mississippian, St. Louis Group.

Greenville, Harrison County, Indiana; Gurley Collection.

Oligoporus bellulus S. A. Miller and Gurley, 1894

Holotype: UC 6190.

S. A. Miller and Gurley, 1894, pp. 7–8, pl. 1, fig. 3.

= *Oligoporus blairi* S. A. Miller and Gurley, 1894.

Jackson, 1912, pp. 351–353, pl. 47, fig. 6; pl. 48, fig. 1.

Mississippian, Keokuk Group.

Boonville, Missouri; Gurley Collection.

Oligoporus blairi S. A. Miller and Gurley, 1894

Holotype, not designated, to be selected from UC 6470.

Referred specimens: UC 6470, three specimens.

S. A. Miller and Gurley, 1894, pp. 6–7, pl. 1, figs. 2 and 6; pl. 2, fig. 7.

Jackson, 1912, pp. 351–353, pl. 47, fig. 7; pl. 49, figs. 1–3.

Mississippian, Keokuk Group.

Boonville, Missouri; Gurley Collection.

See also: *Oligoporus bellulus* S. A. Miller and Gurley, 1894

Oligoporus sulcatus S. A. Miller and Gurley, 1894

Holotype: UC 6623.

S. A. Miller and Gurley, 1894, pp. 8–10, pl. 1, figs. 4 and 5.

Jackson, 1912, pp. 354–355, pl. 47, fig. 10; pl. 48, figs. 3 and 4.

Mississippian, St. Louis Group.

Hardin County, Kentucky; Gurley Collection.

Palaeechinus (?) **minor** Jackson, 1912

Holotype: original designation UC 9054.

Jackson, 1912, pp. 310–311, pl. 29, fig. 7; pl. 31, fig. 6.

Mississippian, Kinderhook.

Burlington, Iowa; Gurley Collection.

Remarks: *Palaeechinus* Lovén, 1874 = *Palaeechinus* McCoy, 1844

Kier in Moore, 1966, p. 309.

Pholidocidaris irregularis (Meek and Worthen, 1869)

See: *Lepidocentrus irregularis* Meek and Worthen, 1869

Nortonechinus primus Fenton and Fenton, 1924

Referred specimen: UC 26109 [not UC 29109].

Fenton and Fenton, 1924, pp. 203–204.
Devonian, Hackberry Stage, *Spirifer* Zone.
Bird Hill, Rockford, Iowa; Fenton Collection.
Referred specimens: UC 26110, 23 specimens.
Fenton and Fenton, 1924, pp. 203–204.
Devonian, Hackberry Stage, *Spirifer* Zone.
Claypit, Rockford, Iowa; Fenton Collection.

Nortonechinus welleri Thomas, 1924

Referred specimen: UC 34711.
Kier, 1968, pp. 1163–1170, pl. 151, figs. 3–4; pl. 152, figs. 1, 3–5;
pl. 153, fig. 5.
Devonian, Hackberry Stage.
Rockford, Iowa; F. A. Wilder, donor.

CATALOGUE OF CASTS OF TYPE AND REFERRED SPECIMENS
ECHINOIDEA

Archaeocidaris agassizi Hall, 1858

Holotype: UC 15869, spines and plates.
Hall, 1858, p. 698, pl. 26, figs. 1a–d.
S. A. Miller, 1889, p. 225, text fig. 249.
Grabau and Shimer, 1910, p. 579, text fig. 1912.
Jackson, 1912, p. 266, pl. 13, fig. 1.
=*Echinocrinus dininnii* (White, 1880)
Shimer and Shrock, 1944, p. 217, pl. 82, fig. 5.
Mississippian, Burlington Limestone.
Burlington, Iowa; Hall Collection.
Remarks: Shimer and Shrock, 1944, figured UC 15869, as *E. dininnii* (White, 1880).

Cidaris suevica Desor

Referred specimen: UC 54072.
Ward, 1866, p. 159.
Jurassic (Upper Oxfordian) Middle Oolite.
Württemberg, Germany.

Echinocrinus dininnii (White, 1880)

See: *Archaeocidaris agassizi* Hall, 1858.

Hemipneustes radiatus Agassiz

Referred specimen: UC 54073.

Ward, 1866, p. 166, text fig.

Cretaceous (Upper Chalk).

Maestricht, Holland.

CATALOGUE OF TYPE AND REFERRED SPECIMENS
CYCLOCYSTOIDEA

Cyclocystoides cincinnatiensis S. A. Miller and Faber, 1892

Holotype: UC 8843.

S. A. Miller and Faber, 1892, p. 84, pl. 1, figs. 7 and 8.

Ordovician, Cincinnati, Maysville.

Cincinnati, Ohio; Faber Collection.

Cyclocystoides illinoisensis S. A. Miller and Gurley, 1895

Holotype: UC 6051A.

S. A. Miller and Gurley, 1895, p. 61, pl. 5, fig. 27.

=*Cyclocystoides* (?) *illinoisensis* S. A. Miller and Gurley, 1895

Foerste, 1920, p. 63, pl. 1, fig. 17A.

Referred specimen: UC 6051B.

S. A. Miller and Gurley, 1895, p. 61, pl. 5, fig. 28.

=*Savagella ornatus* (Savage, 1917)

Foerste, 1920, pp. 61-63, pl. 1, fig. 18.

Ordovician, Orchard Creek Shale.

On Orchard Creek near Thebes, Alexander County, Illinois; Gurley Collection.

Remarks: *Savagella* Foerste, 1920=*Cyclocystoides* Salter and Billings, 1858

Kesling in Moore, 1966, p. 206.

Cyclocystoides nitidus Faber, 1886

Holotype: UC 8845.

Faber, 1886, pp. 17-18, pl. 1, fig. 1.

Ordovician, Cincinnati Group, Maysville.

Near Transit, Ohio, 400 feet above low water mark in the Ohio River; Faber Collection.

Savagella ornatus (Savage, 1917)

See: *Cyclocystoides illinoisensis* S. A. Miller and Gurley, 1895, UC 6051B.

REFERENCES

- EASTON, WILLIAM H.
1942. Pitkin Limestone of Northern Arkansas. Bull. Arkansas Geol. Surv., 8, 115 pp., 12 pls., 10 text figs.
- FABER, CHARLES L.
1886. Remarks on some fossils of the Cincinnati Group. Jour. Cincinnati Soc. Nat. Hist., 9, no. 1, pp. 14-20, pl. 1.
- FENTON, CARROLL LANE and MILDRED ADAMS FENTON
1924. The stratigraphy and fauna of the Hackberry Stage of the Upper Devonian. Univ. Michigan Mus. Geol. Cont., 1, 260 pp., 45 pls.
- FOERSTE, A. F.
1920. Racine and Cedarville cystids and blastoids with notes on other echinoderms. Ohio Jour. Sci., 21, no. 2, pp. 33-78, pls. 1-4, 4 text figs.
- GRABAU, AMADEUS W. and HERVEY WOODBURN SHIMER
1910. North American Index Fossils. Invertebrates, 2, 909 pp., text figs. 1,211-1,937. A. G. Seiler and Co., New York.
- HALL, JAMES
1858. Report on the Geological Survey of the state of Iowa: Embracing the results of investigations made during portions of the years 1855, 1856 and 1857, vol. 1, part 2: Palaeontology, pp. 473-724, pls. 1-29, text figs. 53-118.
- JACKSON, ROBERT TRACY
1912. Phylogeny of the Echini, with a revision of Palaeozoic species. Boston Soc. Nat. Hist. Mem., 7, 491 pp., 258 text figs., 76 pls.
- KIER, PORTER M.
1962. Revision of the cassiduloid echinoids. Smithsonian Misc. Coll., 144, no. 3, publ. no. 4500, 262 pp., 44 pls., 184 text figs., 7 charts.
1968. *Nortonechinus* and the ancestry of the cidarid echinoids. Jour. Paleontol., 42, no. 5, pp. 1,163-1,170, pls. 151-153, 3 text figs.
- MATHER, KIRTLEY F.
1915. The fauna of the Morrow Group of Arkansas and Oklahoma. Bull. Denison Univ. Sci. Lab., 18, pp. 59-284, pls. 1-16, 2 text figs.
- MEEK, F. B. and A. H. WORTHEN
1869. Descriptions of new Crinoidea and Echinoidea, from the Carboniferous rocks of the western states, with a note on the genus *Onychaster*. Proc. Acad. Nat. Sci. Philadelphia, 1869, pp. 67-83.
1873. Palaeontology. Descriptions of invertebrates from Carboniferous System. Ill. Geol. Surv., 5, Geology and Palaeontology, pp. 321-619, pls. 1-32.
- MILLER, S. A.
1879. Remarks upon the Kaskaskia Group, and descriptions of new species of fossils from Pulaski County, Kentucky. Jour. Cincinnati Soc. Nat. Hist., 2, no. 1, pp. 31-42, pls. 7-8.
1889. North American Geology and Palaeontology for the Use of Amateurs, Students, and Scientists. Cincinnati, Ohio. 664 pp., 1,194 text figs.

1891. Palaeontology. Preliminary remarks. Advance Sheets, 17th Ann. Rep., Geol. Surv. Indiana, pp. 1-103, pls. 1-20.
- 1892a. Palaeontology. Preliminary remarks. 17th Ann. Rept., Indiana Dept. Geol. Nat. res., pp. 611-705, pls. 1-20.
- 1892b. First Appendix, 1892. North American Geology and Palaeontology. Cincinnati, Ohio. Pp. 665-718, text figs. 1,195-1,265.
- MILLER, S. A. and CHARLES L. FABER
 1892. Some new species and new structural parts of fossils. Jour. Cincinnati Soc. Nat. Hist., 15, no. 2, pp. 79-87, pl. 1.
- MILLER, S. A. and WM. F. E. GURLEY
 1890. Description of Some New Genera and Species of Echinodermata from the Coal Measures and Subcarboniferous Rocks of Indiana, Missouri and Iowa, 59 pp., 10 pls. Published by the authors.
1891. Description of some new genera and species of Echinodermata from the Coal Measures and Subcarboniferous rocks of Indiana, Missouri and Iowa. Indiana Dept. Geol. Nat. Hist., Ann. Rept., 16, pp. 327-373, pls. 1-10.
 [Note: Date on title page is 1889, however this reference is quoted in Schuchert, 1915, Bull. U. S. Nat. Mus., 88, p. 284, as 1891.]
1894. Description of some new species of invertebrates from the Palaeozoic rocks of Illinois and adjacent states. Bull. Illinois State Mus. Nat. Hist., 3, 81 pp., 8 pls.
1895. Description of new species of Palaeozoic Echinodermata. Bull. Illinois State Mus. Nat. Hist., 6, 62 pp., 5 pls.
- MOORE, R. C., editor
 1966. Treatise on Invertebrate Paleontology, Part U, Echinodermata (3), 2 vols., 695 pp., 534 text figs. Geol. Soc. Amer. and Univ. Kansas Press, New York.
- SHIMER, HERVEY W. and ROBERT R. SHROCK
 1944. Index Fossils of North America, 837 pp., 303 pls. John Wiley and Sons, Inc., New York.
- SLOCOM, ARTHUR WARE
 1909. New echinoids from the Ripley Group of Mississippi. Field Mus. Nat. Hist., Geol. Ser., 4, no. 1, publ. no. 134, pp. 1-16, pls. 1-3.
- WARD, HENRY A.
 1866. Catalogue of Casts of Fossils from the Principal Museums of Europe and America, with Short Descriptions and Illustrations. Rochester, New York. 228 pp., numerous text figs.
- WHITE, C. A.
 1878. Descriptions of new species of invertebrate fossils from the Carboniferous and Upper Silurian rocks of Illinois and Indiana. Proc. Acad. Nat. Sci. Philadelphia. 1878, pp. 29-37. [Author's edition distributed at the meeting of the Academy April 2, 1878. Not seen.]
1883. Contributions to invertebrate paleontology no. 8: Fossils from the Carboniferous rocks of the interior states. U. S. Geol. Geogr. Surv. Terr. for 1878, pp. 155-171, pls. 39-42. [Author's edition published 1880. Not seen.]



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